

Work Order ID 131095

131095

Page 1

March-26-15 1:41:33 PM

Item ID: D6101-007 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle Billet
 Start Date: 3/26/15 Start Qty: 18.00 ***18*** Cust Item ID:
 Required Date: 3/26/15 Req'd Qty: 18.00 ***18*** Customer:
 Reference:

Approvals: Process Plan: WLS Date: 1503-31 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6101	Rev B

100	PURCHASING	0.00
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100

Purchasing

Purchasing

Memo

Issue P/O: 28037
 a) Description: Alluminum billet
 b) 7.750" x 8.250" x 2.50" thick
 c) Tolerance on all dimensions are +0.030"/-0.000"
 d) Grain direction along 7.750" length
 e) Material: 7075-T7351 (QQ-A-250/12)
 f) Material certification required

CH 15104106 18

110	Receive & Inspect for Damage & Mat'l Certs	0.00
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110

Packaging

Packaging

Memo

Ensure material certification is attached

18x 8015-04-16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

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Item ID: D6101-007 Accept ***N900040100*** Setup Start ***NS1***
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 Item Name: Saddle Billet
 Start Date: 3/26/15 Start Qty: 18.00 ***18*** Cust Item ID:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00				18	0		DAS 14 9-89 15/04/17
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>MAT 41</u> Memo	0.00 0.00		15/04/19		18	0		DAS 08 9-89
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00				MLJ		15-04-20	MLJ 15-04-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
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Picklist Print

March-26-15 1:41:33 PM

Page 1

Work Order ID: 131095

131095

Parent Item: D6101-007

D6101-007

Parent Item Name: Saddle Billet

Start Date: 3/26/15

Required Date: 3/26/15

Start Qty: 18.00

Required Qty: 18.00

Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6101-007P

Purchased

No

110

Each

0.0000

1

18

D6101-007P

7075-T7351 8.25X7.75X2.5

**

18x 8p15-04-16.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

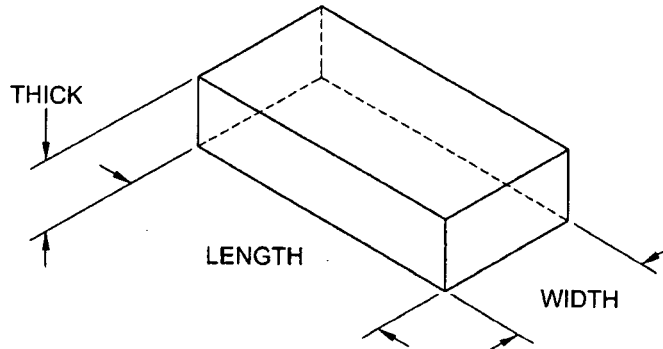
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SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/W

NO. 131095M45
 15-03-31
 UNCONTROLLED
 REV. A
 RF

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO. D6101 REV. B	
MFG. APPR.	<i>[Signature]</i>	SHEET 1 OF 1	
APPROVED	<i>[Signature]</i>	TITLE SADDLE BILLET, 7075 SCALE NTS	
DE APPR.	<i>[Signature]</i>	DATE 09.04.23	
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO28037

Purchase Order Date 4/7/2015

PO Print Date 4/7/2015

Page Number 2 of 3

Order From :

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

Destination-Collect

Line Total: \$425.00

3 D6101-007P

7075-T7351
8.25X7.75X2.5

4/21/2015

18.00

\$61.10

\$1,099.80

Yes

Each

4/21/2015

AS PER DWG D6101 REV. B
B131095

MATERIAL: 7075-T7351 (QQ-A-250/12)

SIZE: 7.750" X 8.250" X 2.50" THICK

GRAIN DIRECTION ALONG: 7.750" LENGTH

TOLERANCE AS PER QUOTE +.030"/-.000"

S9504-16

Line Total: \$1,099.80

4 D6102-013P

6061-T6 7.0X6.5X2.0

4/21/2015

12.00

\$29.50

\$354.00

Yes

Each

4/21/2015

AS PER DWG D6102 REV. D

B131195

SIZE: 7.000" X 6.500" X 2.00" THICK

GRAIN DIRECTION ALONG 6.500"

MATERIAL 6061-T6/T6511 QQ-A-250/11

TOLERANCE AS PER QUOTE +.030"/-.000"

Line Total: \$354.00

Note:

4/7/2015

**Castle Metals®**

A. M. Castle & Co.

**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

Page 1 of 2

Shipment No:2572016

Ship From: A. M. Castle & Co. MONTREAL - CASTLE METALS 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 15-APR-2015	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 2572016-2	

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No 3814661	Line No 2	Item No 752241.MO	Description 2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12				
Purchase Order No 28037	Part Number YOUR ITEM NUMBER: D6101-007		Ordered Qty 18.00 PCS	Invoice Qty 18.00 PCS			

Details	MARK HEAT # ON PIECES SHIP TO CASTLE, MONTREAL (POINTE-CLAIRE) CUSTOMS BROKER: GEORGE H. YOUNG END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS	<i>Sasou76</i>
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Delivery No. 120016449	Mill KAISER ALUMINUM	Heat Number 	Mech Id	PCS 18	Width (IN)	Length (IN)	Shipped Qty(LBS) 297.5704
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These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
Date Printed: 15-APR-2015 10:42:04 AM



Castle Metals®

A. M. Castle & Co.

**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

Page 2 of 2

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

SHIP TO:

A M CASTLE & CO
3050 SOUTH HYDRAULIC
WICHITA, KS 67216

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CERTIFIED TEST REPORT

Serial Number

4304789

CUSTOMER PO NUMBER: 228162		WORK PACKAGE:	CUSTOMER PART NUMBER: 752241		SHIP RUN/LOAD: 102695/11	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1154968	LINE ITEM: 1	SHIP DATE: 26-JUL-2013	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Kaiser Select® Plate	
WEIGHT SHIPPED: 3584 LB	QUANTITY: 2 PCS EST.	TRUCK B/L #: 2043309	GAUGE: 2.5000 IN (63.5000 MM)		DIAMETER/WIDTH: 48.500 IN (1231.9 MM)	LENGTH: 144.500 IN (3670.3 MM)	

MHU 1699372: LOT 646617A1; 2 pieces;

Certified Specifications

AMS 4078/RevJ
ASTM B 209/Rev10
BSS 7055/RevA
DPS 4.713/RevAK
GSS16100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 594/Rev09
CMMP 025/RevU
EAC MS1011/RevE
MMS 159/RevT

AMS-STD-2154/RevA
BAC 5439/RevH
CSTI 006/RevD
GAMPS 9101/RevB
PS 21211/RevL

Test Code: 4297

Test Results

Lot: 646617A1

Cast 545

Drop 17

Ingot 1

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	68.9 : 69.6 (475 : 480)	57.8 : 58.3 (399 : 402)	11.2 : 11.6

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.8 Min	41.2 Max
(MS/M) :	23.7 Min	23.9 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.09	0.21	1.4	0.04	2.4	0.20	5.7	0.03	0.01	0.02	TOT 0.05



KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4304789

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

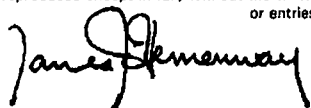
Aluminum Remainder

TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.



JAMES HEMENWAY, LABORATORIES SUPERVISOR

Page 2 of 2



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6101-007
 DATE: 15/04/17

PO / BATCH NO.: 28037/131095

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 18
 QUANTITY INSPECTED: 18
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 7.750x8.250x2.50
 THICKNESS RECEIVED: 7.750x8.250x2.50
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL	(Y)	N	
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT MATERIAL	(Y)	N	
CORRECT REF # TO LINK CERT	(Y)	N	
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>14</u> <u>9-89</u>	SIGNED OFF BY: _____		
DATE: <u>15/04/17</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING

AFTER MATERIAL PASSES INSPECTION

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN **20pcs** FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER